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CROSS-VALIDATION OF THE MMPI-BASED OFFENDER TYPOLOGY WITH A CANADIAN PSYCHIATRIC INCARCERATE SAMPLE

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ABSTRACT

A study was undertaken to determine the validity of Megargee and Bohn's MMPI-based offender typology on a sample of 276 Canadian incarcerates referred to maximum-security psychiatric facility. An 87% classification rated achieved. The frequencies of three offender types (Baker, Foxtrot and Jupiter) were insufficient (i.e. <2%), and were excluded from subsequent analyses. Groups were found to differ significantly on 19 of 29 legal, demographic, behavioural and psychometric measures. Groups' relative scores showed high correspondence to those of Megargee and Bohn's (1977) initial validation sample. However, intergroup distinctions were not as sharp. Hence, a collapsing of similar/homogenous groups was recommended. A caution was noted regarding application of the original sorting rules to Canadian samples, owing to the potential cultural inflation of Canadian offender MMPI's. Further research suggestions were made to help clarify discrepant findings on offense category, psychiatric diagnosis, and the dynamics of the typology with respect to age. It was also suggested that group titles be changed to single alphabetical letters or numerical characters, to avoid slang interpretations of the sometimes unusual names.

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INTRODUCTION

Correctional systems are under pressure to develop and implement a classification system capable of several functions. On one hand, it must ensure offenders safe conditions through the separation of dangerous from nonviolent inmates (Louscher, Hosford and Moss, 1983), help improve institutional administration (Hanson, Moss, Hosford and Johnson, 1983), and improve the rehabilitative process through the appropriate assignment of incarcerates to differing programs (Andrews and Kiessling, 1980). On the other hand, the taxonomy must be able to perform these functions in cost-effective ways, to the satisfaction of the public. In short, the penal system is charged with the presentation of a classification scheme which satisfies demanding criteria.

In response to the demand, several approaches borrowing from several disciplines have been introduced. These typologies have been based upon such things as physiological attributes, criminal careers, social class, subcultures, and psychological, psychiatric and developmental theories (see Megargee and Bohn, 1979, for review). As noted by Megargee and Bohn (1979), all current taxonomies fail since they are either unable to classify substantial numbers of offenders, are not economical, are unreliable and invalid, require cumbersome data bases and highly trained personnel to arrive at decisions, or are so far removed from practical application that they are of little use for

differential corrections management and treatment decisions.

Recently, Megargee and his associates (Meyer and Megargee, 1977; Megargee and Dorhout, 1977; Megargee and Bohn, 1977) have presented an empirically-derived, personality-based offender typology which has generated considerable interest (Gearing, 1979; Gottfredson, 1983). This interest stems from preliminary investigations which indicate that this taxonomy avoids most of the aforementioned failings of previous schemes.

Following is a description of this system, known as the "MMPI (Minnesota Multiphasic Personality Inventory) - based offender typology", plus a review of investigations conducted to date concerning the applicability, reliability and validity of the typology.

THE MMPI-BASED OFFENDER TYPOLOGY

Derivation and Description

There were several factors influencing the decision to undertake development of an offender typology based on the MMPI. First, the MMPI is the most widely used personality test in American and Canadian correctional facilities (Gearing, 1979; Gendreau, 1975). Moreover, MMPI administration comprises part of the standard admissions process in many institutions (Elion and Megargee, 1975). The test is completely standardized and scoring can be computerized, thus permitting expedient and inexpensive test usage, where highly trained personnel are not required in data collection. Hence, there exists an inexpensive and easily obtained data base.

Importantly, research with this instrument is quite extensive, and it has enjoyed moderate success as a differentiator and predictor of criminal behaviour (see Gearing, 1979, for review). In addition, research with psychiatric samples has proven quite successful in the delineation of MMPI types (Dahlstrom, Welsh, and Dahlstrom, 1975), sugggesting it could similarly serve as the basis for an offender typology that was more "objective, reliable and economical than those currently available," (Meyer and Megargee, 1977, p.116).

In the derivation, MMPI profiles of youthful male offenders from the medium-security Federal Correctional Institute (FCI) at

Tallahassee, Florida were subjected to a "hierarchical profile analysis" (Veldman, 1967). This program combines data into similar groups of cases rather than scales, maximizing intergroup differences, while minimizing intragroup differences (Megargee and Bohn, 1977). It was found that profiles did fall into "reliable, natural groupings," (Meyer and Megargee, 1977, p.123). Similar results were obtained for derivation and several cross-validation samples. Initial sorting rules were formulated which took into account the Welsh code, scale elevations, phase characteristics and overall profile slope of the groups. Groups were given arbitrary alphabetic labels to avoid premature characterizations of the types (Meyer and Megargee, 1977). Megargee and Bohn (1979) provide an extended description of the derivation process.

Work was subsequently directed at formulating concrete guidelines which could be translated to computer language for the fast and reliable classification of profiles (Megargee and Dorhout, 1977). Progressing through several levels of refinement, the resultant system comprises ten groups (Able, Baker, Charlie, Delta, Easy, Foxtrot, George, How, Item, Jupiter), and utilizes two sets of rules for classification, "essential" or Set I rules, and "accessory" or Set II rules. If a profile fails to meet any Set I requirements, it is not included in that group. Set II guidelines provide a "goodness of fit approximation" to break ties where profiles are multiply classified (Megargee and Dorhout, 1977, p.128). Where ties still

exist after the implementation of accessory rules, Megargee and Dorhout (1977) recommend a clinical reconciliation by personnel familiar with MMPI interpretation. To this end, they provide relatively subjective tertiary tie-breaking recommendations. The actual sorting regulations have been documented by Megargee and Dorhout (1977), and a computer program for classification has been made commercially available (Megargee and Bohn, 1979).

The Ten Types

Following refinement and operationalization of sorting rules, Megargee and Bohn (1977; 1979) undertook an extensive investigation of the characteristics of the 10 groups, to determine whether or not the types differed on variables other than their MMPI profile. In terms of profile elevations alone, the ascendency from the most benign to the most deviant group is Item, Easy, Baker, Able, George, Delta, Jupiter, Foxtrot, Charlie, and How. However, such assignments had to be supported by collateral data.

Working out of the Tallahassee FCI, Megargee and Dorhout (1977) assembled 1,214 valid intake MMPI's. Of this number, 1,164 (96%) were classifiable. The proportional distribution of types was Able 17%, Baker 4%, Charlie 9%, Delta 10%, Easy 7%, Foxtrot 8%, George 7%, How 13%, Item 19%, and Jupiter 3%. Analyses were performed on 116 non-MMPI variables which included measures for demographic data, academic and intellectual data,

social and developmental data, psychologists' observations (which included a psychometric test battery), institutional adjustment ratings, interpersonal adjustment ratings, and importantly, recidivism data. Of the 116 analyses, 97 proved statistically significant. Moreover, Megargee and Bohn (1977) claim that data were internally consistent in that differing data sources converged, showing similar ordinal relations among groups.

On the basis of the significant differences found, Megargee and Bohn (1977) have developed comprehensive group descriptions reflecting modal characterizations of each group. As summarized by Edinger, Reuterfors and Logue (1982), Megargee and Bohn (1977) have described group Able as forceful, self-confident and manipulative individuals who engage in antisocial acts with little guilt. Group Baker individuals appear depressed, withdrawn and have difficulty relating to peers and authority figures. Type Charlie is characterized as bitter and hostile, with a propensity toward aggression. Type Delta cases are amoral, impulsive and use considerable charm to manipulate others. Type Easy individuals are quite intelligent and well adjusted, but are underachievers in educational and vocational pursuits. Type Foxtrot comprises obnoxious, "streetwise," abrasive individuals who are the source of much interpersonal conflict, and engage in criminal activity out of sheer enjoyment. Contrastingly, type George comprises submissive, adaptive individuals who experience much fewer interpersonal conflicts. Type How represents the most psychopathologically disturbed group

whose criminal behaviour represents one facet of maladaptive functioning. Type Item inmates appear to be the most normal and well adjusted individuals, whose criminal behaviour appears unrelated to interpersonal or psychiatric problems. Lastly, group Jupiter is characterized as highly impulsive, yet well adjusted within the prison environment.

Consistent with the above descriptions, Megargee and Bohn (1977; 1979) have also provided recommendations for the differential treatment and management of the groups.

Based on the work presented by Megargee and Bohn (1977; 1979), the MMPI-based typology appears to satisfy many of the requirements of a useful taxonomy, which were briefly outlined before. Despite this apparent promise, it may be noted that all these studies were performed just by Megargee and his associates. Moreover, they are restricted to medium-security, young adult male federal incarcerates in Tallahassee, Florida (Edinger, 1979). Consequently, several researchers have attempted to ascertain the replicability, validity, and generality of the MMPI-based typology with other inmate samples. The review now considers these studies.

VALIDATION OF THE MMPI-BASED TYPOLOGY

Typology Replication

Two studies have attempted to replicate the derivation of the MMPI system (Nichols, 1979; Mrad, Kabacoff and Duckro, 1983). These studies were undertaken to see if the types would emerge in populations differing from the initial derivation samples, since clustering methods such as hierarchical profile analysis potentially create sample-specific solutions.

Nichols (1979) used the profiles of Mississippi and Alabama state adult offenders, and found groups that resembled all of Megargee's types with the exception of Baker, Easy and Jupiter. Mrad et al. (1983) subjected 292 MMPI profiles of Missouri halfway house residents to a hierarchical profile analysis. All profiles had been screened for validity (F<99T), and were classifiable using Megargee and Dorhout (1977) Set I and Set II rules. An 11 cluster solution was obtained that demonstrated a highly significant cross-tabulation with the Megargee types.

Despite this, inconsistencies emerged. First, examination of the MMPI profiles of the 11 derived clusters yielded differences from the mean profiles of the Megargee groups. Second, Mrad et al.'s (1983) cluster 4 did not relate to any of the Megargee types, suggesting a group unique to this sample. Also, Megargee's group Item was not clearly replicated. Lastly, as it was found by Nichols (1979), Mrad et al. (1983) failed to

replicate types Baker, Easy and Jupiter. This suggests that these groups may have been unique to the original sample and do not generalize to non-Southern, non-federal offenders (Mrad et al., 1983).

In view of the above inconsistencies, these authors suggest first, an additional sorting procedure which requires the correlation of a profile with the mean MMPI profiles of the types, in an effort to circumvent the absolute cut-off score problems associated with Set I rules. These problems stem from the fact that a profile can highly resemble one group in shape and elevation, yet a difference of just T=2 points from a scale score cut-off, via Set I rules, will exclude the profile from that group. An example is group Able, where D scale scores slightly above T=60 will result in a classification of Baker or Foxtrot, despite high correspondence elsewhere. Second, they suggest the exclusion of groups Baker, Easy and Jupiter in a general system.

In all, this first set of non-Megargee studies demonstrates that the basic groups are reproduced in different samples, thus attesting to the reliability of the typology; albeit with several qualifications. Perhaps the most important finding was that of sample-specific groups (Mrad et al.'s cluster 4) which suggests that potentially unique groups will be masked where the Megargee and Dorhout (1977) rules are applied to other offender populations.

Classification Rates and Proportional Distribution of Types

Consistent with the initial findings of Megargee and his associates, other investigators have been able to classify between 82% and 92% of profiles using the Megargee and Dorhout (1977) rules (Edinger, 1979; Edinger et al., 1982; Johnson, Simmons and Gordon, 1983; Louscher et al., 1983). Again consistent with Megargee's work, typically 65% of profiles are uniquely classified, the remainder requiring tie-breaking procedures. These findings indicate a generally applicable taxonomy which is able to classify substantial numbers of incarcerates.

A related concern is the proportional distribution of types. Where the sorting rules are applied to maximum-security penitentiary samples, proportionally greater numbers of the antisocial-aggressive types such as Charlie and Foxtrot should be found, to the extent that Megargee and Bohn's (1979) characterizations are accurate. Similarly, when applied to psychiatric incarcerate samples, greater numbers of the psychopathological types such as How should be identified. Results to support these hypotheses have been only moderately conclusive.

Edinger (1979) attempted to classify 3354 intake MMPI profiles of male Alabama-state and federal medium-security inmates. In comparison to the proportional distribution obtained by Megargee and Bohn (1977), Edinger identified significantly

fewer type Ables and Deltas, and significantly more Easys and Items. Edinger (1979) concludes that the inclusion of state offenders, and the differing racial composition of his sample accounts for the obtained difference.

However, Edinger (1979) performed some unspecified, and hence questionable changes to the Megargee and Dorhout (1977) program, revising it several times until it "identified all 10 types," (p.236). Considering the findings of Nichols (1979) and Mrad et al. (1983), there exists the possibility that all 10 types do not actually exist in the sample tested by Edinger (1979). In simple terms, Edinger may have been revising rules to identify types where none existed. Although this possibility is slim considering the large sample used by Edinger, the fact remains that his revisions may have been sufficient to significantly alter the proportional distribution of types from those of Megargee and Bohn (1977).

Elsewhere, Edinger et al. (1982) employed the classfication system with a sample of violent offenders from a research unit, and a second sample from a forensic psychiatric unit. This time the actual Megargee and Dorhout (1977) computer program was used. All 10 types were in evidence. Group numbers were not proportionately different from those of Megargee's Tallahassee sample, but the mental health unit was significantly different from the research unit. Specifically, fewer Ables were found in the research sample, and, consistent with the earlier stated hypothesis, more Hows were identified in the pyschiatric unit.

Louscher et al. (1983) investigated the efficacy of the MMPI-based typology for classifying 796 American federal penitentiary inmates. These offenders were violence-prone and had been committed to a maximum-security facility. Significant proportional differences in comparison to Megargee were obtained, where, contrary to expectation, Louscher et al. identified fewer Foxtrots and more Items. Recall that Foxtrot was characterized as the most belligerent, and Item as the most benign group. These results appear curious.

However, Louscher et al. (1983) introduce an important point in that psychological test completion is not mandatory in federal institutions, hence the more antisocial types such as Foxtrot will likely decline test administration or invalidate protocols more often. This will lead to the underrepresentation of the troublesome types. It is noted that Megargee and Dorhout (1977) administered MMPI's until each and every subject in their cohort produced a valid protocol. Given the regulation of the Federal Bureau of Prisons, this was clearly impossible for Louscher et al. (1983) to do. Hence, the problem of selection bias is introduced for samples other than Megargee and Dorhout's (1977), which may alter the proportional distribution of types.

Demographic and Behavioural Data

These represent two important sets of data in that the demonstration of differences between groups on such collateral

measures supports the empirical integrity of the system. In less technical terms, consistently obtained differences attest to the validity of the taxonomy.

Race is a variable typically trichotomized according to white, black, and "other." "Other" comprises Hispanics and American Indians. Results concerning the relation of race to type have been inconclusive. Megargee and Bohn (1977) found significant differences, yet Edinger (1979), Edinger et al. (1982), and Louscher et al. (1983) found none. Despite this, one clear finding does emerge, this being the disproportionate representation of blacks in group Jupiter; considered one of the more 'deviant' types (Megargee and Bohn, 1977).

It is presently contended that this disproportionate representation is largely artifactual in nature. Specifically, group Jupiter is identified by elevations on scales Sc and Ma, these being the two scales identified by Gynther (1972) as the most consistently elevated where blacks are compared to whites on the MMPI. More importantly, these elevations are not related to psychopathology, but rather to cultural, educational, intellectual, and linguistic factors (see Borzecki, Black and Wormith, 1984). Hence, although just one group is appreciably affected, it appears that the MMPI-based typology is not immune to the old problem of cultural and racial bias on the MMPI, where minorities are erroneously portrayed as more deviant.

A second variable of importance is offense type in that intuitively, it represents one of the more obvious distinctions

between offenders. Here results have proven somewhat more consistent than is the case with race.

Investigating medium-security FCI inmates in Tallahassee, Florida and Petersburg, Virginia, both Megargee and Bohn (1977) and Edinger (1979) noted significant differences across groups according to offense category. In spite of the significant findings, direct comparison across investigations is difficult since these authors subdivided the plethora of possible infractions quite differently. Nevertheless, both studies found type Charlie to be more involved in violent crimes against persons than the other groups. Also, group Jupiter was distinguished by involvement in robbery. Lastly, both investigations found that groups Item and Easy had perpetrated significantly more narcotics violations and victimless crimes than the remaining groups. In sum, the typology appears to be valid in distinguishing according to offense type, where it is applied to large, heterogenous groups of medium-security offenders.

However, the taxonomy appears to fail in delineating types, with regard to offense type, in more homogenous samples of maximum-security incarcerates. Louscher et al. (1983) failed to note any differences among 300 uniquely classified penitentiary inmates. Edinger et al. (1982) dichotomized offenses as being either violent (against persons) or nonviolent (all others), and found no differences in their maximum-security psychiatric sample, but significant differences among their violence-prone

research sample. Inconsistent with Megargee and Bohn's (1979) and Edinger's (1979) results, groups Able and Item were considered violent, and more surprisingly, Baker, Foxtrot and How were relatively nonviolent. Edinger et al. (1982) provide no explanation for this curious finding, although it is possible that the selection bias underrepresenting the more antisocial members of the deviant subtypes is in effect. Notwithstanding this, 2 of 3 results mentioned indicate that in maximum-security settings, inmates are too homogenous with respect to offense type to be distinguished according to the MMPI-based typology.

Only one study has considered psychiatric diagnosis in relation to the typology, and here significant differences were found. Using 3 categories (psychosis, personality disorder, other) Edinger et al. (1982) found groups Jupiter, Baker and Foxtrot diagnosed as proportionately more psychotic, and groups Delta, Easy, George and Able described most frequently as being personality disordered. These diagnoses show some correspondence to Megargee and Bohn's (1977) modal characterizations of groups in that 3 of their 5 more deviant groups (How, Charlie, Foxtrot, Jupiter and Delta) were diagnosed as psychotic: psychoticism being considered the most pathological group of syndromes (Diagnostic and Statistical Manual of Mental Disorders 3ed., American Psychiatric Association, 1980). Such diagnostic characterizations of the groups are useful in that they provide suggestions toward the differential treatment of the various groups. In view of the importance of such results, Edinger et

al.'s (1982) findings require replication.

Institutional Behaviour and Adjustment

To the extent that the Megargee taxonomy is suitably predictive of institutional behaviour and adjustment, differential management decisions can be greatly helped. However, this scheme is at best a qualified success in this area. Pertinent studies are discussed below.

In their medium-security sample, Megargee and Bohn (1977) found significant differences among the types with regard to the mean number of days in cell houses per quarter (both a disciplinary and protective measure, therefore uninformative), and the type of infraction committed (violent or 'disruptive, but nonviolent'). The mean number of reports to sick call per quarter (according to "prison folklore" a good indirect measure of institutional adjustment; Megargee and Bohn, 1979, p.165), and the mean number of disciplinary reports per quarter did not significantly differentiate the groups. However, data indicate that, overall, disciplinary write-ups were rare, thus detracting from the reliability of this finding (Megargee and Bohn, 1979). From this set the only revealing result is that for type of infraction where Jupiters, Charlies, Foxtrots and Hows accounted for most violent infractions. Hows, Bakers, Charlies and Deltas were responsible for the most 'disruptive, but nonviolent' infractions. In all cases, groups Easy and Item were the best

behaved.

Elsewhere, Edinger (1979) found significant intergroup differences in terms of verbal aggression (considered a measure of violence), and group defiant infractions (a measure of interpersonal hostility). Groups did not differ in terms of evasion (lying, being in unauthorized areas), or pilfering. However, the groups did significantly differ on a total of these 4 measures of institutional misconduct. A posteriori contrasts showed group Charlie as the most verbally aggressive, with groups Easy and Baker the least. Group Delta was by far the most interpersonally hostile, and misconduct totals revealed types Delta and Foxtrot as being significantly more disruptive than group Item.

Among maximum-security samples, Louscher et al. (1983) found no differences in the number of incident reports, the number of admissions to the prison detention unit, the number and type of inmate complaints submitted, and no group-wise statistical correspondence between their own and Megargee's rule infraction data. The only significant finding related to type of incident, where consistent with Megargee's characterizations, members of group Foxtrot had committed more "disruptive, but nonaggressive rule infractions," (Louscher et al., 1983, p.277).

Also working out of a maximum-security facility, Hanson et al. (1983) investigated the relative predictive powers of 4 classification methods, one of which was the MMPI-based typology, toward 5 measures of institutional adjustment (number of rule

infraction reports, days in segregation, days statutory good time forfeited, work performance ratings, total). A stepwise regression analysis revealed that only 3 groups were good predictors, and each for an isolated measure of adjustment (segregation, How; good time forfeited, Charlie; work performance, Easy). In relation to overall adjustment, canonical correlations revealed that only type Charlie was a good predictor (canonical r=.23).

Considering the preceding 4 studies together, several points can be made. First, members of groups Easy and Item appear to be the institution "good-guys," demonstrating good adjustment and behaviour in all studies except that of Louscher et al. (1983). Second, groups Charlie and Foxtrot top the misconduct ratings, with group How revealing a similar, but far less pronounced, trend of behaviour. Third, in medium-security facilities, group Delta appears the most interpersonally hostile, although without recourse to physical violence. Fourth, results indicate that there is some merit in Louscher et al.'s (1983) statement that Megargee and Bohn's (1979) rule infraction findings do not generalize to maximum-security settings. However, this statement may be premature, since Megargee and Bohn (1979) have stated that incidences of misconduct at Tallahassee were rare, thereby rendering their findings less reliable. Moreover, Edinger (1979) produced a larger, and hence more reliable set of medium-security misconduct data which did show somewhat greater correspondence to that of Louscher et al.

(1983).

In short, there exist a number of consistencies with regard to the institutional data, thereby supporting the groups' modal characterizations. Unfortunately for the taxonomy, there exist an equal number of inconsistencies. One particularly contentious issue concerns the generalizability of the scheme to penitentiary settings in the prediction of adjustment and misconduct (Louscher et al., 1983; Hanson et al., 1983). Extending this, an important point is raised by Hanson et al. (1983), in that if only a fraction of the types are generally predictive of institutional behaviour, then given the proportional distributions of types, only a small percentage of inmates would benefit from classfication by this system. In this sense, the typology does not appear to be a great improvement over previous ones.

Dynamics and Temporal Consistency

At the outset, Megargee (1977) speculated that his typology was dynamic - that is an offender's type would change with maturity. Edinger (1979), while conceding that longitudinal research was required, interpreted his finding of significant age differences across groups as being indicative of this typology's dynamicism. Such an interpretation is potentially wrong, since other variables such as an offender's aggregate sentence length and amount of time spent imprisoned will likely interact with age factors in producing differentials among groups. For example,

older offenders typically have served more time, hence obtained age differences may actually reflect institutional factors. Perhaps time served is a better indicator of the dynamics of the system, not age. At present no study has addressed the interaction of these variables in terms of the typology.

Elsewhere, several research groups have adopted the longitudinal approach (Simmons, Johnson, Gouvier and Muzyczka, 1981; Johnson et al., 1983). Both studies note significant type changes at median test-retest intervals of 4 and 10 months. Owing to the large percentage of the sample changing types, Simmons et al. and Johnson et al. conclude that the typology is much too temporally inconsistent and hence is of little use as a classificatory tool.

However, Simmons et al. (1981) and Johnson et al. (1983) have been sharply criticized by Zager (1983) on several points. First, Simmons et al. and Johnson et al. failed to account for transfers of the more disturbed inmates to psychiatric and segregation units, such that the relative proportions of these groups would appear greatly altered upon retest. Second, the instructions from test to retest were quite different. Confidentiality was assured on retest, yet in the initial administration, traditional instructions stressing placement and planning via the MMPI were used. Hence, response set problems are introduced. Third, Simmons et al. (1981) and Johnson et al. (1983) both imply that change is bad, yet in the absence of collateral data documenting the direction of change, this cannot

be said. If sense prevails, changes in type should reflect such things as institutional adjustment (or maladjustment), and the rehabilitative (or debilitative) effects of imprisonment. Moreover, changes should reflect changes in an offender's age, to the extent that 'pure' age differentials exist among groups.

In short, the 2 longitudinal studies cited herein are too methodologically weak to permit conclusion. In addition, investigation of the interaction of age with other legal and demographic variables should be undertaken to ascertain if the typology is dynamic with respect to age.

Summary

The preceding review comprises a summary of investigations conducted to date concerning the MMPI-based offender typology. Both the relative merits and shortcomings of the system have been addressed.

From the review, several areas for further research are suggested. First, additional work is needed among maximum-security inmates in order to help resolve the discrepant findings relating to maximum- and medium-security inmates (Megargee and Bohn, 1979; Edinger, 1979; Louscher et al., 1983; Hanson et al., 1983). Second, additional investigation of the typology with regard to psychiatric incarcerates should be performed in view of Edinger et al.'s (1982) important findings. Third, the relation between certain legal and demographic

variables, with regard to the age dynamics of the system, is in need of clarification. Lastly, the generality of the typology to samples outside the United States is an important issue which has not yet been considered.

Toward these ends, the current study attempts to cross-validate the MMPI-based offender typology on a sample of maximum-security, Canadian psychiatric incarcerates.

METHOD

Subjects

Participants were inmates of the Regional Psychiatric Centre (Prairies), a maximum security psychiatric prison for males, operated by the Correctional Service of Canada. Inmates are referred to this institution by court, the parole board, and case workers from other correctional institutions. Subjects in the present study were successive first admissions to the facility between January, 1978 and September, 1982. Seventy-three percent, or 275 had completed the MMPI.

Dependent Measures

Following is a description of the psychometric and sociometric assessment instruments employed in the current study.

The Minnesota Multiphasic Personality Inventory (MMPI) is a self-report measure to which respondents answer "True," "False," or "Cannot say," on 550 affirmative statements (Dahlstrom et al., 1975). The scale was developed to include several measures of psychopathology through criterion keying of items, "the criterion being traditional psychiatric diagnosis," (Anastasi, 1982, p. 501). The MMPI consists of 10 clinical scales and 3 validity scales. The latter group is intended to indicate test-taking problems and peculiarities. Research with the MMPI is quite

extensive and its validity as a criterion measure is "comparatively well founded," (Butcher and Tellegen, 1978, p.620). Detailed descriptions of the MMPI and its psychometric properties are provided by Dahlstrom et al. (1975).

The California Personality Inventory (CPI) is a self-report measure to which respondents answer "True" or "False", on 480 statements tapping "personality characteristics important for social living and social interaction," (Gough, 1969, p.5). The CPI consists of 18 scales grouped into 4 broad categories. Although 200 CPI items appeared originally in the MMPI, it is designed more to assess the personality characteristics of 'socially functioning' individuals, and less psychopathology, unlike the MMPI. The CPI has been employed extensively in both professional and research areas. An extended description of the instrument plus reliability and validity data are provided by Gough (1969).

Presently, 3 of the 18 CPI scales were utilized, these being 'Socialization', 'Self-Control', and 'Good Impression.' All 3 are taken from the cluster of scales measuring the socialization, maturity, and responsibility of respondents. The choice of these scales was predicated upon the relevance of these personality attributes to criminal behaviour as demonstrated through previous research (Warren, 1969; Linden and Hackler, 1973; Andrews, 1980; Friesen and Andrews, 1982).

Hogan (1969) has constructed an inventory to measure capacity for empathy - the intellectual or imaginative

apprehension of another's condition or state of mind. This self-report instrument comprises 64 items developed through the use of a combined MMPI-CPI item pool, where previously determined high and low empathy groups' responses were compared, and items which maximally separated the groups were extracted. Details of test construction, as well as its psychometric attributes are provided by Hogan (1969).

In that empathy can be considered a central component of moral development (Hogan, 1969), it is particularly important to the study of criminal behaviour. This point has been empirically established elsewhere (Chandler, 1973; Andrews and Kiessling, 1980), and hence lends justification to the inclusion of the Hogan scale in the present study.

Attitudes Toward the Law, Courts and Police (LCP), Tolerance for Law Violations (TLV), and Identification with Criminal Others (ICO), are 3 self-report paper and pencil measures designed to assess specific criminal sentiments (Andrews and Wormith, 1984). LCP items "reflect respect for the law and criminal justice without specific reference to law violations or law violators. TLV items reflect specific justifications for illegal activity, and ICO items request personal judgements regarding criminal others," (Andrews and Wormith, 1984, p.4). The LCP scale comprises 25 items, the ICO 6 items, and the TLV 10 items. All measures employ a 5 point Likert response format. These scales are modifications of scales used in the Connecticut correctional system (Gendreau, Grant, Leipciger and Collins,

1979), and appear to have developed from the work of Reckless and associates (Andrews and Wormith, 1984). Work has been conducted over the past 10 years demonstrating the statistical reliability and validity of the scales. Scale documentation including descriptions and comprehensive summaries of empirical work undertaken to date are provided by Andrews and Wormith (1984).

The association of attitudes, values and beliefs to behaviour is an important issue in the social psychology of criminal behaviour (Bandura, 1977). Attitudes toward the law, courts and police, tolerance for law violations, and identification with criminal others represent 3 attitudes/values/beliefs central to many theoretical and empirical explorations of criminality (Cloward and Ohlin, 1966; Hartung, 1969; Andrews, 1980; Andrews, 1982). Hence the present decision to include scales designed to measure these sentiments.

The Psychopathic State Inventory (PSI) is a multidimensional measure of psychopathy (Haertzen, Martin, Hewett and Sandquist, 1978; Haertzen, Martin, Ross and Neidert, 1980). The PSI was developed through a rewriting of items from psychopathy-related scales of the MMPI (Pd, Ma), the CPI (Responsibility, Socialization), and the Addiction Research Centre Inventory (Psychopathy) (Haertzen, 1974), such that items questioned current cognitions and affective states associated with psychopathy. Additional items "suggesting psychopathy" were selected from sentence completion responses to items devised by mental health professionals (Haertzen et al., 1980, p.138). A

total of 90 affirmative statements comprise 6 scales, and are answered in a "True" or "False" fashion. An important distinction between the PSI and more traditional psychopathy inventories, such as the MMPI Pd, is that the latter are saturated with stable historical and character trait items, whereas the former emphasize psychopathy as a current state subject to fluctuations. Despite a limited amount of data, results indicate a reliable and valid instrument. Extended test descriptions and test data have been detailed elsewhere (Haertzen et al., 1978; Haertzen et al., 1980).

Presently, 'Sociopathy' was the sole PSI scale utilized. This decision was based on the finding that, relative to other PSI scales, Sociopathy proved best at differentiating psychopaths from normals (Haertzen et al., 1980). Moreover, the finding that Sociopathy was only modestly correlated with MMPI Pd (Haertzen et al., 1980), suggests that it is tapping a dimension of psychopathy different from the MMPI Pd - a point of some importance to the current study.

The Wechsler Adult Intelligence Scale (WAIS), and its revised form (WAIS-R), are used to assess general intellectual capacity. Items are organized into 5 subtests of performance IQ and 6 subtests of verbal IQ. Within subtests, items are arranged in order of increasing difficulty. The separate measures of verbal and performance IQ are combined to yield full scale IQ scores (Wechsler, 1958). The reliability and validity of the WAIS are well established (Anastasi, 1982). Reliability and

validity data are summarized by Wechsler (1958) and Matarazzo (1972).

The Wide Range Achievement Test (WRAT) is an individually administered test of academic achievement (Jastak and Jastak, 1978). Ability in the areas of Reading, Spelling and Arithmetic are assessed. Normed on age, individual performances can be expressed as percentile ranks, grade equivalents, as well as standard scores which were used in the current study. The WRAT has been extensively used in the fields of education and psychology as a screening test for special class placements and academic assessment (Harmer and Williams, 1978). Reliability and validity data are provided by Jastak and Jastak (1978).

Raven's Standard Progressive Matrices (SPM) was constructed as a culture-fair test of intellectual efficiency (Raven, Court and Raven, 1977). Examinees are required to choose appropriate components which complete graphic patterns. There are 60 increasingly difficult problems divided into 5 sets of 12. Raw scores are expressed in terms of age-referenced percentiles. Originally published in 1938, a large volume of work has accumulated which establishes the reliability and validity of the SPM. Raven et al. (1977) provide a comprehensive summary of this data.

Blishen (1967) has provided a scale of socioeconomic status based on occupation. In developing the scale, 320 specific occupation types were gleaned from the 1961 Canadian census and arranged on a 100-point integer scale on the basis of the

educational and income characteristics of the incumbents of the respective occupations. Higher scores indicate higher socioeconomic status. Sociometric details of the scale, including the Canadian socioeconomic status distribution, are summarized by Blishen (1967).

Since this measure determines status according to the dominant nonnative parameters of academics and income, it may be inappropriate for natives, who presently comprise 21% of the sample. For example, although "trapper" is very low on the scale, in many small northern settlements most inhabitants are trappers. Some are quite successful and are accorded high status by their peers (Partington, 1983). Nonetheless, Blishen's (1967) scale is considered appropriate to the current study in that few subjects came from these small, remote settlements and our intent is to determine socioeconomic status in terms of national and not community standing.

Following is a description of the legal and demographic measures employed in the current study. Only those variables whose meaning may not be clear through variable title alone are described.

Race was dichotomized according to native and nonnative groups. The native category comprises status and nonstatus Indians, Metis and Inuit. Caucasians were categorized as nonnative.

Criminal offenses were grouped into 5 categories. Sexual offenses (violent rape, attempted rape, indecent assault), crimes

of violence (first and second degree murder, attempted murder, manslaughter, assault, assault causing bodily harm), property offenses (arson, theft, fraud, forgery, extortion, possession or reception of stolen goods, unlawfully in a dwelling), robbery and weapons offenses (robbery, armed robbery, illegal possession of/and concealing firearms, abduction, hijacking), and miscellaneous offenses (narcotics, gaming/betting, parole violations, traffic violations, public disturbances).

Violence rating is a trichotomized variable based upon the magnitude of violence invoked in the actual offense on which an inmate was charged. Charges leading to "violent" ratings include murder, attempted murder, manslaughter, violent sex offenses, assault, robbery with violence, and attempted rape. Charges leading to "semiviolent" ratings include nonviolent sex offenses, armed robbery, arson, kidnapping, abduction, illegal possession of a firearm, detention escape, possession of a concealed weapon, and discharging a weapon. Charges leading to "nonviolent" ratings include narcotics offenses, traffic violations, theft, reception or possession of stolen goods, break and enter, fraud, gaming/betting, forgery, extortion, parole violations, public mischief, auto theft, criminal negligence, trespassing, and unlawfully in a dwelling.

Aggregate sentence represents the total sentence length adjudicated an inmate on his current charge(s). Time served is the amount of time served on the current sentence prior to admission to the RPC.

Procedure

The MMPI and other psychological tests were administered to newly admitted inmates who consented to psychological testing as part of their assessment process upon admission. All data are collected within 3 weeks of an offender's referral. Extensive personal histories and psychiatric interviews were conducted by clinical staff.

K-corrected T scores were used for all MMPI scales (Dahlstrom et al., 1975).

MMPI typing of offenders was conducted with strict adherence to the rules outlined by Megargee and Dorhout (1977). In the event that multiple classifications still existed after the implementation of both essential (Set I) and accessory (Set II) rules, tertiary decision guidelines, based upon the subjective profile descriptions provided by Megargee and Dorhout (1977), were employed. Sorting of profiles according to Set I and II rules was automated, although the computer program used was not that which Megargee and Bohn (1979) have made commercially available.

Psychiatric diagnoses were made according to the Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition (DSM-III) (American Psychiatric Association, 1980). These diagnoses were made by psychiatrists independent of MMPI scores.

Analyses

The dependent measures were submitted to several levels of analysis.

First, as a general rule, all categorical variables such as Offense Category were analyzed by chi-square, and continuous measures were analyzed by one-way analysis of variance (ANOVA). Continuous variable a posteriori contrasts were performed using Duncan's New Multiple Range Test (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). The criterion for significance was set at a probability of .Ø5 or less.

Second, a stepwise discriminant analysis was performed to determine the optimal set of discriminating variables from the large set used. All those variables which significantly differentiated the groups in univariate analyses, and did not have a relatively large number of missing values were included. The stepwise selection criterion used was contribution to the largest increase in Rao's V.

Third, an attempt was made to isolate 'pure' age differentials among groups by controlling for the effects of time served and aggregate sentence. The procedure employed was analysis of covariance (ANCOVA).

RESULTS

Classification Rate and Distribution

In using the typing procedure, 87% (240) of the sample was classified. This percentage is well within the classification range reported by other investigators (Megargee and Dorhout, 1977; Edinger, 1979; Edinger et al., 1982; Johnson et al., 1983).

Table 1 lists the proportional distribution of the MMPI types. It is noted that all groups were identified except Jupiter. In addition, types Baker and Foxtrot together comprised just 3% of classified profiles. By contrast, group How comprised the largest group, accounting for 36% of classified profiles.

These relative frequencies are significantly different from those noted by Megargee and Dorhout (1977) ($X^2[9]=60.04$, $p<.001$). Currently, significantly fewer Foxtrots and Items, and significantly more Hows were identified. However, the present frequencies did not differ significantly from those obtained by Edinger et al. (1982) for their mental health unit sample ($X^2[9]=12.27$, ns.). These findings are of interest in that they are reflective of the psychiatric nature of the sample, to be discussed at a later time.

It is noted that types Baker and Foxtrot were excluded from all subsequent analyses, since their small numbers would call into question the reliability of findings.

TABLE 1

MMPI SCALE MEANS, STANDARD DEVIATIONS AND THE PROPORTIONAL DISTRIBUTION OF THE TEN TYPES

Scale	Able	Baker	Charlie	Delta	Easy	Foxtrot	George	How	Item	Unclassifie
L	56.4	56.3	49.3	54.6	59.5	56.0	55.6	50.6	57.7	51.4
	(9.2)	(11.8)	(8.1)	(8.7)	(10.4)	(16.2)	(10.0)	(9.8)	(9.7)	(7.2)
F	56.6	55.0	86.0	61.7	57.2	66.3	61.6	87.2	56.9	71.2
	(7.3)	(6.0)	(11.8)	(10.7)	(8.7)	(7.8)	(10.3)	(11.6)	(7.6)	(12.7)
K	59.8	55.3	46.5	56.3	61.0	54.3	53.2	47.6	57.4	53.7
	(7.7)	(4.8)	(9.2)	(11.4)	(9.7)	(6.7)	(10.5)	(11.1)	(8.7)	(10.1)
Hs	49.8	51.3	64.6	55.9	55.8	58.3	56.2	78.6	53.4	61.6
	(5.9)	(3.0)	(11.3)	(10.7)	(4.6)	(10.7)	(9.3)	(14.4)	(8.9)	(14.4)
D	51.0	62.3	67.7	60.1	59.9	61.8	71.9	88.6	59.9	61.4
	(5.9)	(4.3)	(8.1)	(11.8)	(11.1)	(9.3)	(10.1)	(11.0)	(11.4)	(11.8)
Hy	53.9	54.5	62.7	59.7	62.3	65.8	58.1	73.5	55.9	60.2
	(7.9)	(5.4)	(9.6)	(7.7)	(6.5)	(6.5)	(7.5)	(8.9)	(7.7)	(8.9)
Pd	69.8	73.8	83.8	83.4	69.2	81.0	73.8	86.1	64.0	72.3
	(7.5)	(4.6)	(11.2)	(4.5)	(6.4)	(6.4)	(8.6)	(11.8)	(8.4)	(9.4)
Mf	54.8	52.5	62.0	61.1	59.9	63.8	58.4	66.8	63.1	62.6
	(7.9)	(8.5)	(8.4)	(7.8)	(8.0)	(6.2)	(9.0)	(11.0)	(10.8)	(12.0)
Pa	54.3	64.0	79.6	60.0	61.4	57.8	54.0	82.5	59.8	68.9
	(7.1)	(4.7)	(7.7)	(7.0)	(6.4)	(8.3)	(7.1)	(14.8)	(8.3)	(15.6)
Pt	51.6	55.5	76.0	60.9	59.2	65.3	58.9	89.5	57.4	64.0
	(7.6)	(7.7)	(9.7)	(8.4)	(8.5)	(9.2)	(6.1)	(11.8)	(9.0)	(12.5)
Sc	55.2	57.5	94.5	64.3	61.4	72.8	59.4	104.4	60.6	77.3
	(7.5)	(3.0)	(7.6)	(6.9)	(8.1)	(5.5)	(6.4)	(17.7)	(9.8)	(19.6)
Ma	67.0	54.5	75.4	58.6	56.0	81.0	62.9	71.7	58.6	70.9
	(6.3)	(3.3)	(10.0)	(9.2)	(6.0)	(7.6)	(8.6)	(14.4)	(7.3)	(14.9)
Si	44.5	54.3	59.6	54.6	50.7	49.5	60.2	67.6	56.2	56.6
	(6.7)	(6.9)	(8.8)	(9.9)	(6.8)	(10.0)	(11.1)	(9.6)	(10.1)	(10.9)
Frequency	25	4	26	30	13	4	14	99	25	36
Relative Frequency	9.1%	1.5%	9.4%	10.9%	4.7%	1.5%	5.1%	35.8%	9.1%	13.0%

MMPI T Scores

Table 1 also lists the mean MMPI T scores on validity and clinical scales for each group. Results indicate a general similarity to those published by Megargee and Dorhout (1977) on regular inmates, and to those of Edinger et al. (1982) pertaining to psychiatric incarcerates.

Specifically, in comparisons of corresponding scales within each type, 64.8% (59/91) and 67.1% (61/91) of the comparisons revealed differences of 3 or fewer T points for the RPC versus Megargee and Dorhout (1977), and for the RPC versus Edinger et al. (1982), respectively. Within types, the largest number of differences was found for group How, where 77% (10/13) and 54% (7/13) exceeded T=3 for the RPC versus Megargee and Dorhout (1977), and for the RPC versus Edinger et al. (1982), respectively. The largest scale differential was found on Sc (8), where RPC How and Charlie scores exceeded the scores of both counterpart American groups by T>14 and T=11 points, respectively. These findings will be discussed in terms of the sorting regulations and American versus Canadian differences in the traditional administration of the MMPI.

Demographic and Nonpsychometric Behavioural Data

Table 2 lists the characteristics of the MMPI groups on several categorical variables. These are considered individually.

Race. No significant differences emerged with regard to the racial composition of the groups. Overall, 20.6% of the sample was native, and 79.4% nonnative. This finding is worthy of discussion in that the current MMPI-typology study is the first to include substantial numbers of natives.

Marital Status. Groups did not differ significantly where marital status was considered. Over 59% of the RPC groups were single, 20.9% were involved in a legal or common-law marriage, and 19.8% were widowed, separated or divorced. These figures are not dissimilar from those of Megargee and Bohn (1977) ($X^2[2]=3.19$, ns.).

Family Structure. No notable differences emerged among groups on family structure. Most RPC inmates (72.4%) had been raised by both natural parents, 7.2% by a single natural parent, 11.6% by adoptive or foster parents, 3.6% by relatives, and 5.2% with one step parent in the home. It is noted that although Megargee and Bohn (1977) obtained many significant differences with regard to developmental family characteristics, they considered variables such as the quality of parent-child relations and not structural variables, as it was the case presently.

CHARACTERISTICS OF THE MMPI GROUPS ON CATEGORICAL VARIABLES[a]

Variable	Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Race									
Native	12.0	23.1	20.0	15.4	28.6	25.5	8.0	19.4	20.6
Nonnative	88.0	76.9	80.0	84.6	71.4	74.5	92.0	80.6	79.4
Number	25	26	30	13	14	98	25	36	267
				$X^2(7)=5.89$, ns.					
Marital Status									
Single	50.0	72.0	46.4	69.2	50.0	60.2	68.0	58.3	59.3
Common-Law/Married	29.2	20.0	17.9	23.1	35.7	18.3	20.0	19.4	20.9
Widowed/Separated/Divorced	20.8	8.0	35.7	7.7	14.3	21.5	12.0	22.2	19.8
Number	24	25	28	13	14	93	25	36	258
				$X^2(14)=12.29$, ns.					
Family Structure									
Natural Parents	66.7	65.2	67.9	84.6	71.4	75.8	72.7	71.4	72.4
Natural Parent	8.3	0.0	14.3	0.0	7.1	6.6	13.6	5.7	7.2
Adopted/Foster Parents	12.5	13.0	10.7	7.7	7.1	13.2	9.1	11.4	11.6
Relatives/Guardian(s)	0.0	8.7	3.6	0.0	0.0	4.4	0.0	5.7	3.6
Single Step Parent	12.5	13.0	3.6	7.7	14.3	0.0	4.5	5.7	5.2
Number	24	23	28	13	14	91	22	35	250
				$X^2(28)=24.94$, ns.					

Continued.../2

TABLE 2, Continued.../2

Variable	Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Violence Rating									
Nonviolent	26.9	26.9	19.4	7.7	14.3	36.7	16.0	27.8	27.1
Semi-Violent	11.5	38.5	32.3	38.5	50.0	26.5	32.0	30.6	29.7
Violent	61.5	34.6	48.4	53.8	35.7	36.7	52.0	41.7	43.1
Number	26	26	31	13	14	98	25	36	268
				$X^2(14)=18.72$, ns.					
Offense Category									
Sex	23.1	26.9	45.2	38.5	42.9	22.4	36.0	33.3	30.1
Violence	42.3	23.1	19.4	38.5	21.4	22.4	36.0	22.2	26.0
Property	15.4	19.2	16.1	7.7	7.1	29.6	12.0	22.2	20.8
Robbery/Weapons	7.7	19.2	16.1	15.4	28.6	19.4	12.0	13.9	16.7
Miscellaneous	11.5	11.5	3.2	0.0	0.0	6.1	4.0	8.3	6.3
Number	26	26	31	13	14	98	25	36	268
				$X^2(28)=28.02$, ns.					
Psychiatric Diagnosis on Admission									
Psychosis	3.8	19.2	6.5	15.4	0.0	13.1	32.0	22.2	14.4
Neurosis	0.0	0.0	0.0	0.0	7.1	7.1	0.0	0.0	3.0
Personality Disorder	76.9	26.9	35.5	7.7	35.7	40.4	44.0	25.0	38.5
Sexual Deviate	0.0	3.8	12.9	7.7	14.3	5.1	8.0	5.6	6.3
Alcohol/Drug Abuse	0.0	0.0	3.2	15.4	7.1	3.0	4.0	2.8	3.3
Other/Retarded	19.2	50.0	41.9	53.8	35.7	31.3	12.0	44.4	34.4
Number	26	26	31	13	14	98	25	36	269
				$X^2(35)=64.55$**					

a**p<.01.

Violence Rating. Group differences on violence rating were nonsignificant. Overall, 43.1% of the RPC inmates were considered violent, 29.7% semi-violent, and 27.1% nonviolent. The greater percentage of violent offenders is to be expected since the RPC is a maximum-security facility.

The present result is congruent with past findings that violence ratings based upon violence of current offense yield nonsignificant differences across MMPI-based groups, even among more heterogenous samples of offenders (Megargee and Bohn, 1977). Hence, the indication is that violence ratings should be based upon psychologists' appraisals or prior institutional infraction records (Megargee and Bohn, 1979; Edinger, 1979).

Offense Category. No significant intergroup differences emerged with regard to offense category. Considering the complete sample, 30.1% had perpetrated sex offenses, 26.0% violent crimes against persons, 20.8% property offenses, 16.7% robbery and/or weapons offenses, and 6.3% miscellaneous offenses. This finding of nonsignificant differences appears to correspond with results obtained by other researchers among high-risk inmates (Louscher et al., 1983). However, other legal factors may be interacting here which produce the nonsignificant result. These will be considered momentarily.

Psychiatric Diagnosis. This proved the one classificatory variable on which the groups differed significantly.

Group Item had the highest proportion of psychotic diagnoses, with group Charlie a distant second. Groups George

and Able were the least psychotic. Over 75% of group Able was diagnosed as having personality disorders, yet only 7.7% of group Easy was similarly diagnosed. Groups Delta and George were most often described as sexual deviants, yet group Able contained no such individuals. The largest proportion of substance abusers was found in group Easy; there were none comprising groups Able and Charlie.

By collapsing the current diagnostic categories, statistical comparisons to Edinger et al.'s (1982) results were made possible. Significant differences emerged in all 3 categories. The RPC had a smaller proportion of psychotic Ables, Charlies, Georges and Hows, but a greater percentage of psychotic Items ($X^2[6]=82.50$, $p<.001$). Proportionately fewer RPC Charlies, Deltas, Easys and Georges, and proportionately more Ables were considered personality disordered ($X^2[6]=70.98$, $p<.001$). Lastly, the RPC had a greater percentage of types Charlie, Delta, Easy, George and How in the "other" category ($X^2[6]=279.69$, $p<.001$).

Considering the importance of diagnostic differences among groups, with respect to differential treatment recommendations, several points will be addressed momentarily concerning the lack of congruency apparent here.

The following results concern continuous, nonpsychometric demographic and behavioural measures. Table 3 lists the means and standard deviations of the MMPI groups on these variables, and Table 4 presents a posteriori contrasts using Duncan's New Multiple Range Test.

TABLE 3

MEANS AND STANDARD DEVIATIONS OF THE MMPI GROUPS ON CONTINUOUS MEASURES

Variable		Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Age on Admission (years)	$\bar{X}$.	28.1	24.7	31.3	33.5	28.1	27.4	29.6	29.4	28.4
	(S.D.)	(8.8)	(7.3)	(10.1)	(9.9)	(9.8)	(7.9)	(9.3)	(10.1)	(9.0)
	Number	25	26	30	13	14	99	25	36	268
Time Served (months)	$\bar{X}$.	29.2	16.1	29.8	47.2	19.6	11.2	26.6	23.7	20.6
	(S.D.)	(33.3)	(26.6)	(33.9)	(69.7)	(22.8)	(12.0)	(29.4)	(24.4)	(28.6)
	Number	25	26	29	12	14	97	24	34	261
Aggregate Sentence (months)	$\bar{X}$.	87.8	63.2	88.8	169.8	66.5	55.6	96.2	102.4	79.3
	(S.D.)	(85.3)	(72.0)	(83.6)	(96.0)	(64.3)	(63.9)	(84.4)	(88.2)	(80.2)
	Number	25	26	30	13	14	99	25	36	268
Age Last Attended School (years)	$\bar{X}$.	17.4	15.9	15.1	15.8	16.0	15.5	16.1	16.2	15.7
	(S.D.)	(1.3)	(1.5)	(1.8)	(1.2)	(2.0)	(2.1)	(1.7)	(2.0)	(1.9)
	Number	18	19	21	8	13	78	20	26	203
Education Level Achieved	$\bar{X}$.	9.9	8.8	8.1	9.8	9.5	8.6	9.0	9.3	8.9
	(S.D.)	(1.9)	(1.8)	(2.6)	(2.7)	(2.4)	(2.5)	(2.3)	(2.4)	(2.4)
	Number	21	21	24	12	13	85	22	28	226

Continued.../2

TABLE 3, Continued.../2

Variable		Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Full Time Employment in Two Years Prior to Incarceration (months)	$\bar{X}$.	10.4	5.2	14.8	13.9	10.8	7.5	19.7	9.2	10.3
	(S.D.)	(9.7)	(6.3)	(9.1)	(9.9)	(8.6)	(8.7)	(16.6)	(8.4)	(10.6)
	Number	14	13	11	7	10	51	16	17	139
Blishen Socioeconomic Status Rating	$\bar{X}$.	43.5	32.9	37.9	38.8	46.6	39.2	38.6	39.0	39.0
	(S.D.)	(14.8)	(4.7)	(7.2)	(12.2)	(14.9)	(11.1)	(11.3)	(12.4)	(11.4)
	Number	15	17	14	12	9	60	14	24	165
WAIS Full Scale IQ	$\bar{X}$.	104.1	96.3	100.7	117.1	94.9	92.5	98.8	98.0	97.7
	(S.D.)	(9.1)	(16.4)	(16.4)	(16.6)	(8.8)	(12.7)	(12.0)	(15.3)	(14.5)
	Number	20	14	24	8	9	65	19	28	187
WAIS Verbal IQ	$\bar{X}$.	99.5	93.3	97.9	117.1	94.8	91.3	97.5	96.1	95.8
	(S.D.)	(10.1)	(15.7)	(16.6)	(17.0)	(13.1)	(14.5)	(13.1)	(17.9)	(15.6)
	Number	20	15	24	8	10	65	19	28	189
WAIS Performance IQ	$\bar{X}$.	109.3	99.4	104.5	115.2	96.7	94.8	101.0	100.6	100.5
	(S.D.)	(8.9)	(17.5)	(16.4)	(16.5)	(6.0)	(11.5)	(12.1)	(13.2)	(13.9)
	Number	20	16	24	9	9	66	19	28	191

Continued.../3

TABLE 3, Continued.../3

Variable		Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Raven's Matrices (percentiles)	$\bar{X}$. (S.D.)	.62 (.24)	.45 (.35)	.53 (.36)	.76 (.22)	.50 (.30)	.41 (.33)	.58 (.30)	.55 (.33)	.51 (.32)
	Number	24	17	27	12	13	83	21	28	225
WRAT Standard Reading	$\bar{X}$. (S.D.)	96.6 (18.0)	91.9 (17.9)	96.5 (16.3)	104.5 (17.3)	99.5 (13.4)	93.0 (19.3)	101.3 (19.1)	94.9 (16.6)	95.6 (18.1)
	Number	16	17	20	10	8	68	18	23	180
WRAT Standard Spelling	$\bar{X}$. (S.D.)	95.9 (18.5)	91.5 (23.9)	94.3 (21.0)	102.8 (15.5)	91.6 (17.3)	88.6 (21.4)	96.9 (25.0)	90.4 (20.4)	92.1 (21.2)
	Number	21	20	24	10	11	80	20	27	213
WRAT Standard Arithmetic	$\bar{X}$. (S.D.)	94.2 (12.6)	87.3 (14.2)	95.4 (17.8)	101.1 (13.9)	92.4 (17.3)	87.6 (15.9)	96.5 (17.2)	91.2 (13.2)	91.2 (15.8)
	Number	20	20	24	10	11	81	20	27	213
Psychopathic State Inventory-Sociopathy	$\bar{X}$. (S.D.)	5.2 (2.8)	9.6 (3.5)	4.8 (2.2)	4.0 (2.3)	5.2 (3.1)	7.7 (2.4)	4.6 (2.4)	6.0 (2.8)	6.3 (3.0)
	Number	16	14	24	12	12	66	18	24	186

Continued.../4

TABLE 3, Continued.../4

Variable		Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
CPI-Socialization	$\bar{X}$.	34.1	20.7	31.1	38.1	30.0	23.2	38.0	29.2	28.4
	(S.D.)	(12.0)	(10.8)	(9.4)	(10.6)	(9.3)	(11.4)	(10.9)	(7.2)	(11.9)
	Number	17	16	25	13	8	70	18	22	189
CPI-Self Control	$\bar{X}$.	49.9	29.7	50.4	51.9	44.1	35.2	50.5	44.8	42.2
	(S.D.)	(10.7)	(10.1)	(11.1)	(12.5)	(12.5)	(13.2)	(9.0)	(11.8)	(14.0)
	Number	17	16	25	13	8	70	18	22	189
CPI Good Impression	$\bar{X}$.	51.2	35.0	50.6	51.9	44.3	36.8	51.8	44.4	43.4
	(S.D.)	(12.6)	(10.7)	(12.1)	(14.9)	(13.1)	(11.0)	(11.3)	(11.1)	(13.4)
	Number	17	16	25	13	8	70	18	22	189
Attitudes (Positive) Towards Laws, Courts and Police	$\bar{X}$.	88.8	71.6	87.6	92.4	85.4	79.8	89.7	90.1	84.4
	(S.D.)	(12.1)	(15.5)	(17.0)	(15.0)	(15.3)	(13.9)	(15.5)	(13.4)	(15.5)
	Number	17	15	26	12	12	68	20	24	194
Identification with Criminal Others	$\bar{X}$.	16.6	19.2	15.0	16.0	15.2	16.9	15.1	15.7	16.3
	(S.D.)	(3.5)	(4.8)	(3.1)	(4.2)	(4.2)	(4.3)	(3.7)	(3.1)	(4.0)
	Number	17	15	25	12	12	67	19	25	192

Continued.../5

TABLE 3, Continued.../5

Variable		Able	Charlie	Delta	Easy	George	How	Item	Unclassified	Overall
Tolerance for Law Violations	$\bar{X}$.	22.6	31.1	22.4	22.5	22.2	25.9	22.3	22.5	24.3
	(S.D.)	(5.8)	(7.0)	(6.3)	(7.1)	(6.2)	(6.4)	(5.3)	(6.6)	(6.7)
	Number	17	15	25	12	12	67	19	25	192
Empathy (Hogan)	$\bar{X}$.	35.9	28.8	32.5	33.1	30.5	27.4	32.8	31.8	30.7
	(S.D.)	(7.0)	(6.0)	(7.3)	(7.0)	(7.3)	(4.9)	(5.3)	(8.4)	(6.8)
	Number	13	9	23	11	8	52	17	19	152

Age on Admission. The overall mean age on admission was 28.4 years, and differences among groups were significant. At a mean of 24.7 years, Charlie was significantly younger than Delta and Easy. At a mean of 33.5 years, type Easy contrasted significantly with types Charlie and How. These results are comparable with Edinger's (1979) Alabama-state male sample, where types Charlie and Easy were significantly the youngest and oldest types, respectively.

Time Served. Intergroup differences on this variable were highly significant. Type Easy had spent the most time institutionalized; differences from groups George, Charlie and How were significant. Group How had spent the least time incarcerated, contrasting significantly with types Item, Able, Delta and Easy.

Aggregate Sentence. Results similar to those of time served were obtained here. Type Easy had been adjudicated significantly lengthier sentences than all other groups, and Hows had the shortest sentences, although only significantly so with respect to types Item and Easy.

It is noted that the extremely large standard deviations apparent on time served and aggregate sentence can be attributed to the presence of life sentence holders within the groups. These sentences are commuted to lengths of 25 years, substantially longer than all other charges.

Education Level Achieved. Nonsignificant differences were obtained on this variable. It is noted that comparison to

TABLE 4

DUNCAN MULTIPLE RANGE RESULTS ON CONTINUOUS MEASURES[a,b,c]

Variable	ANOVA F Value	Ranges
Age on Admission	1.99*	C H A G U I D E
Time Served	4.38***	H C G U I A D E
Aggregate Sentence	4.92***	H C G A D I U E
Education Level Achieved	1.56	D H C I U G E A
Age Last Attended School	1.95	D H U E C I G A
Full Time Employment in Two Years Prior to Incarceration	3.62***	C H U A G E D I
Blishen Socioeconomic Status Rating	1.55	C D I E U H A G
WAIS Full Scale IQ	4.60***	H G C U I D A E
WAIS Verbal IQ	3.51***	H C G U I D A E
WAIS Performance IQ	5.27***	H G C U I D A E
Raven's Matrices (Percentiles)	3.84***	H C G D U I A E
WRAT Standard Reading	0.97	C H U D A G I E
WRAT Standard Spelling	0.98	H U C G D A I E
WRAT Standard Arithmetic	2.05	C H U G A D I E
Psychopathic State Inventory-Sociopathy	9.90***	E I D G A U H C
CPI-Socialization	8.30***	C H U G D A I E

Continued.../2

TABLE 4, Continued.../2

Variable	ANOVA F Value	Ranges
CPI-Self Control	11.36***	C H G U A D I E
CPI-Good Impression	9.17***	C H G U D A I E
Attitudes (Positive) Towards Law, Courts and Police	4.42***	C H G D A I U E
Identification with Criminal Others	2.29*	D I G U E A H C
Tolerance for Law Violations	4.46***	G I D E U A H C
Empathy (Hogan)	4.23***	H C G U D I E A

[a] *p<.05; **p<.01; ***p<.001.

[b] Types joined by a common line do not differ significantly at the .05 level. Range data are organized with the left side representing the lowest mean and the right side the highest mean.

[c] A=Able; C=Charlie; D=Delta; E=Easy; G=George; H=How; I=Item; U=Unclassified.

Megargee and Bohn's (1977) educational data is difficult since grading systems differ from Canada to the United States. Moreover, highest grade achieved can be a misleading variable in that promotion policies differ greatly among school boards.

Age Last Attended School. Intergroup differences only approached significance here. It is noted that Able had attended school to a more advanced age than did Delta.

Full Time Employment in 2 Years Prior to Incarceration. This measure proved to be a significant differentiator of groups. Type Item had the longest work term, contrasting significantly with groups George, Able, How and Charlie. Type Charlie maintained the briefest mean employment period, significantly so with respect to types Delta and Item.

Megargee and Bohn (1977) did not record duration of full time employment prior to incarceration, yet they did rate offenders on pre-sentence employment problems. Despite the fact that their ratings' criteria are not listed, it is not unreasonable to assume that the two measures are comparable. Considered this way, the two sets of results are quite consistent, in that Items have the best employment records (fewer problems, longest duration), with Charlies and Hows maintaining the poorest records.

Blishen Socioeconomic Status Rating. No significant intergroup differences were revealed in the analysis of variance. The present results show no correspondence to those of Megargee and Bohn (1977), but these authors do not list their criteria for

determining socioeconomic status. Hence inter-investigation comparison may be misleading.

Psychometric Data

Means and standard deviations of the ten groups, with respect to psychometric measures, are found in Table 3. Table 4 lists intergroup a posteriori contrasts.

WAIS IQ's. Considering the 3 IQ scores, a highly consistent and significant pattern of results emerges. Group Easy stands alone as the most intelligent of the types. On each of the 3 indices (full scale, verbal, performance) their mean IQ is above 115, indicating intelligence levels one full standard deviation above the WAIS standardized mean of 100. Able and Delta are the only other groups whose IQ's exceed 100 on at least 2 of 3 measures. Contrastingly, group How emerges as the least intelligent, achieving mean scores in the low 90's on all 3 measures. How scores were significantly lower than those of Delta, Able and Easy.

A similar phenomenon is noted by Megargee and Bohn (1977), where intelligence was assessed by means of the Beta scale.

Raven's Matrices (Percentiles). A pattern of results similar to those from the WAIS analyses was found. However, the differences were not so distinct. Type Easy still rates as the most intelligent group, scoring in the 76th percentile. Able maintains the second spot, placing in the 62nd percentile.

Groups How and Charlie again rate lowest, falling into the 41st and 45th percentiles, respectively. Duncan Multiple Range results show How and Charlie scoring significantly lower than Item, Able and Easy.

WRAT Reading, Spelling, Arithmetic. There were no significant differences among the MMPI-based types on any of these 3 measures of academic achievement.

PSI - Sociopathy. This may be considered a more fair test of psychopathy than the MMPI Pd (4) given the facts that the Megargee and Dorhout (1977) sorting rules largely determine intergroup differences on Pd, and that it is only moderately correlated to the PSI-Sociopathy (Haertzen et al., 1980).

Differences were highly significant on this measure, with a pattern of contrasts quite similar to those obtained on the MMPI Pd scale. Type Charlie was significantly more sociopathic than the other groups. Type How also contrasted significantly with the remaining groups, being less sociopathic than Charlie, yet more so with respect to the others. There were no other significant differences.

CPI Socialization (So), Self-Control (Sc), Good Impression (Gi). Results indicate that these 3 measures significantly discriminate the groups.

Comparing means listed by Megargee and Bohn (1977) with those from Table 3, it is noted that the complete RPC sample scored an average 6.5 points lower than the Tallahassee cohort on all three measures. Moreover, these scores are well below the

CPI standardized means of 50. Such reduced scores might be expected among psychiatric samples. Further examination reveals that groups Charlie, George and How were major contributors to the differentials. RPC Charlies' mean score on So and Sc, RPC Georges' mean on So, and RPC Hows' mean on Gi were all 9 points or lower in comparison to their Florida counterparts.

Considering the Duncan Multiple Range results from Table 4, it is found that Charlie and How are significantly more delinquent (So) than all types except George; Item and Easy are the least so, but only with respect to Charlie and How. Similarly, Charlie and How are significantly more impulsive (Sc) than the others. Lastly, Charlie and How contrast significantly with all others except George, in their inability to present a good impression (Gi). Taking into account the current lack of Bakers, Foxtrots and Jupiters, these a posteriori contrasts correspond remarkably well with those of Megargee and Bohn (1977).

LCP, ICO, TLV. Significant differences were obtained among groups on all three of these attitudinal measures.

Type Charlie contrasted significantly with respect to the other groups in terms of: maintaining the least positive attitudes towards the justice system (LCP), the highest identification with criminal others (ICO), and the highest tolerance for law violations (TLV). Other results revealed that How also had low LCP scores, significantly so with respect to groups Delta, Able, Item and Easy. Considering ICO, type Able's

high mean score did not differ from that of Charlie and How, but it did relative to the lower means of George, Item and Delta. Lastly, all groups, with the exception of Charlie, were similar with respect to tolerance for law violations.

It is noted that Megargee and Bohn (1977) found no differences across groups in "negative attitudes toward the Criminal Justice System," as assessed through intake interview scales (p.166). However, their result is less reliable than that noted presently, owing to the comparatively well-established reliability and validity of the LCP scale (Andrews and Wormith, 1984).

Empathy (Hogan). This final psychometric instrument produced yet another significant result.

Specifically, How appeared significantly less empathic than all groups except Charlie and George. The only other significant contrast found Able more empathic than both Charlie and How.

It is noted that the overall RPC empathy score, listed in Table 3, is quite comparable to the norms published by Hogan (1969) concerning male prison inmates (30.7 versus 30.4). This figure is, in turn, significantly less than the normative score of college students (Hogan, 1969).

Discriminant Analysis

The variables used in the analysis included the 3 WAIS measures of intelligence, Raven's Matrices, all 3 CPI scales,

LCP, ICO, TLV, PSI-Sociopathy, Age on Admission, Age Last Attended School, Time Served and Aggregate Sentence. All these variables significantly differentiated groups in univariate tests, and did not have substantial numbers of missing values.

Table 5a lists the stepwise discriminant analysis results. An 8 variable set was selected which met the criterion of significantly contributing to an increase in Rao's V. Two legal/demographic (aggregate sentence and time served) and seven psychometric variables comprised the set.

The centre portion of Table 5a lists details of the one function, out of a possible seven, which significantly discriminated the groups. The finding of only one significant function indicates that, for the variable set entered, the groups are discernable along one dimension. From the standardized discriminant function coefficients in Table 5a, it is apparent that this function is strongly defined by WAIS Full Scale IQ and CPI Socialization (WAIS Full IQ with CPI-So zero-order $r=.26$, $p<.01$). Hence, it represents an intelligence and delinquency (Gough, 1969) dimension.

The lower portion of Table 5a lists the mean discriminant scores for each group. The function appears best at separating group Easy from groups Charlie and How. This result is not unexpected in that Easy was by far the most intelligent group and also maintained high Socialization scores. By contrast, Charlie and How were the least intelligent and most delinquent of all the groups. However, the finding of just 3 bipolar groups on this

TABLE 5a

STEPWISE DISCRIMINANT ANALYSIS RESULTS FOR THE MMPI-BASED GROUPS[a]

Step	Variable	Wilks' Lambda	Change in Rao's V	Standardized Discriminant Function Coefficients (1)
1	CPI Good Impression	.58	59.9***	.41
2	WAIS Full Scale IQ	.55	49.7***	.55
3	Aggregate Sentence	.34	39.5***	.22
4	CPI Socialization	.28	25.9***	.51
5	Age Last Attended School	.24	20.8***	-.21
6	Time Served	.21	20.1**	.40
7	Tolerance for Law Violations	.18	12.9	.03
8	Raven's Matrices	.17	15.1*	.27

Function	Eigenvalue (% variance)	Canonical r	Wilks' Lambda	X^2	df
1	2.23 (76.9)	.83	.17	148.27**	56

Mean Discriminant Scores for Each Group

Able	Charlie	Delta	Easy	George	How	Item	Unclassified
1.49	-1.30	1.65	3.65	-.36	-1.40	.81	.79

[a]*p<.05; **p<.01; ***p<.001.

function indicates a considerable amount of overlap among groups.

The classification results found in Table 5b support the above statement. Results indicate an unimpressive hit rate of 30.87%. Group Easy was the only type which had more than 50% of its members correctly classified. Groups Able, Delta and George were misclassified more than they were properly classified. It is of interest to note that for each of the above mentioned groups, 25% of their members were misclassified as group How members. However, this likely stems from the fact that in the case of high intergroup similarity, there exists a much higher probability of being assigned to the larger group (Klecka, 1975). Recall from Table 1 that type How was the largest group, comprising 35.8% of all classified profiles. One encouraging finding is that the unclassified cases were fairly evenly misclassified across groups, indicating that they share legal and psychological attributes with most other groups, and hence are essentially not unique.

A word of caution is extended concerning the discriminant analysis. Despite the fact that care was taken to select variables without many missing values, the fact remained that only 92 of 268 subjects had data on all the variables initially included. In comparison to the N's used in the analyses of variance, case-wise deletion of missing values reduced the numbers included in the discriminant by half. Hence, even the univariate F ratios for these variables would be different from those recorded in Table 4. In short, the above point renders the

TABLE 5b

STEPWISE DISCRIMINANT ANALYSIS CLASSIFICATION RESULTS FOR THE MMPI-BASED GROUPS

Actual Group	Number of Cases	Predicted Group Membership							
		Able	Charlie	Delta	Easy	George	How	Item	Unclassified
Able	25	3 12.0%	0 0.0%	6 24.0%	5 20.0%	1 4.0%	6 24.0%	3 12.0%	1 4.0%
Charlie	26	2 7.7%	8 30.8%	1 3.8%	3 11.5%	2 7.7%	6 23.1%	4 15.4%	0 0.0%
Delta	30	5 16.7%	0 0.0%	6 20.0%	7 23.3%	3 10.0%	8 26.7%	1 3.3%	0 0.0%
Easy	13	0 0.0%	2 15.4%	1 7.7%	7 53.8%	0 0.0%	1 7.7%	2 15.4	0 0.0%
George	14	0 0.0%	1 7.1%	3 21.4%	0 0.0%	4 28.6%	4 28.6%	1 7.1%	1 7.1%
How	99	5 5.1%	17 17.2%	13 13.1%	6 6.1%	7 7.1%	44 44.4%	3 3.0%	4 4.0%
Item	25	3 12.0%	4 16.0%	4 16.0%	4 16.0%	1 4.0%	3 12.0%	5 20.0%	1 4.0%
Unclassified	36	2 5.6%	3 8.3%	9 25.0%	8 22.2%	3 8.3%	5 13.9%	3 8.3%	3 8.3%

Overall percentage of grouped cases correctly classified: 30.87%

reliability of the present discriminant analysis somewhat questionable.

Analyses of Covariance

Consistent with the notion that age effects across groups may be a reflection of institutional factors, as measured by time served, an analysis of covariance revealed no significant main effects for age by type ($F[7,254]=1.04$, $p<.41$), controlling for time served. Importantly, significant covariation effects emerged for time served ($F[1,254]=20.58$, $p<.001$). It is noted that age on admission was moderately correlated with time served ($r=.26$, $p<.01$).

However, since time served and aggregate sentence were highly correlated ($r=.66$, $p<.001$), it may be argued that the observed effect for time served reflected the lengthier sentences adjudicated these offenders. Accordingly, a second ANCOVA was performed on age of admission, this time controlling for both aggregate sentence and time served. No significant effects were found for grouping ($F[7,253]=1.10$, $p<.40$), or aggregate sentence ($F[1,253]=0.01$, $p<.90$). However, again a significant covariation effect was obtained for time served ($F[1,253]=11.72$, $p<.001$). Hence, it appears that the typology is dynamic, this being a function of institutional effects, not age. In other words, having served more time appears to increase the likelihood of being classified among one of the more benign types.

DISCUSSION

Distribution of Types

The first point of discussion concerns the distribution of types. More specifically, the finding that the present sample contained no type Jupiters, and only a small number of types Baker and Foxtrot.

First, the failure to identify any Jupiters may be due to the racial composition of the RPC sample. Recall that both Megargee and Bohn (1977) and Edinger (1979) found blacks disproportionately represented in this type. However, the present sample contained no black subjects, hence the lack of Jupiters.

Second, the findings of Nichols (1979) and Mrad et al. (1983) may equally apply in the current nonidentification of Jupiters, and the small numbers of Bakers. Recall that both these previous investigations failed to replicate types Jupiter and Baker among their non-Southern, state offenders. Notwithstanding the above point, it is noted that both groups Baker and Jupiter were found to occur relatively infrequently (4% and 3%, respectively), even within Megargee and Dorhout's (1977) original derivation sample. In fact, the difference between the RPC and the Tallahassee FCI, with respect to the proportions of Bakers and Jupiters, was not even significant. Hence one must temper any conclusions claiming the nonexistence of these types,

outside of the Tallahassee FCI, with the realization that the relatively rare identification of groups Baker and Jupiter is to be expected.

Third, the significant underrepresentation of Foxtrots in the RPC sample may be another instance of the selection bias brought to light by Louscher et al. (1983), where the disruptive types such as Foxtrot either decline administration of the MMPI or frequently invalidate protocols. Institutions under the direction of the Correctional Service of Canada have not made psychological test administration mandatory, therefore inmate refusals to take the MMPI are not uncommon. Recall that just 73% of the first admissions considered had completed the MMPI. In addition, as it was the case with Louscher et al.'s (1983) cohort, the present sample comprised maximum-security, often violence prone offenders. Hence, in the 27% that refused administration of the MMPI presently, there may have been an appreciable number of group Foxtrot members.

Sorting Rules and Canadian MMPI's

Closely related to the subject of type distribution is the finding of a significantly larger percentage of Hows in the RPC sample. A simple interpretation would be to attribute the difference to the use of a psychiatric incarcerate sample. There are, however, several additional considerations.

Specifically, in comparisons of T scores, a general

similarity was found between the RPC, the Megargee and Dorhout (1977) cohort, and the Edinger et al. (1982) psychiatric sample, except in the case of type How. Within this group, the RPC sample had a substantial number of elevations. Considering the sorting rules outlined by Megargee and Dorhout (1977), it can be said that group How is the only one whose scores would be allowed to achieve such elevations, owing to the absolute score cutoffs imposed by the other groups regarding membership. In fact, group How is identified "more by elevations than by a specific scale configuration," where by Set I rules, at least 7 scales must exceed T=70 (Megargee and Dorhout, 1977, p.142).

The above point becomes extremely important when it is also noted that Canadian incarcerate MMPI's reveal significant elevations over those of similar American samples (Borzecki et al., 1984). Hence, the indication is that more Canadian MMPI profiles might be categorized as group How members by virtue of the cultural inflation of Canadian profiles and the sorting regulations, with no real behavioural basis for the more deviant classification. However, as a caution, it is noted that since the proportion of group How members in the RPC and Edinger et al. (1982) mental health sample did not differ significantly, one cannot conclude that the large RPC group How membership is attributable to the above noted factors. Nevertheless, the question of culturally elevated Canadian incarcerate MMPI's and the specifics of the typology sorting rules is something which warrants serious consideration, especially in the application of

the system to nonpsychiatric Canadian offenders.

A second point regarding the classification of Canadian offenders concerns its use among native inmates. The present finding of nonsignificant group differences according to race is important in that natives have been found to have artifactually raised scores on select MMPI scales relative to nonnatives (Borzecki et al., 1984). However, the present classification system does not disproportionately place natives in the more deviant types. An implication is that the Megargee and Dorhout (1977) sorting rules might be applied directly to uncorrected native MMPI profiles. Despite this, there still exists the previously noted problem of potential type misidentification for all Canadian profiles, native and nonnative.

A third Canada-related issue concerns the nonsignificant offense category result. The present finding appears consistent with those of other investigations dealing with maximum-security inmates (Edinger et al., 1982; Louscher et al., 1983), suggesting that high-risk MMPI-typed inmates are too homogenous with respect to offense category to be significantly differentiated. However, any such conclusion may be premature.

First, a more obvious explanation for the observed non-relation is that the specific schemes used to subdivide offenses have resulted in categories which are insensitive to intergroup differences. A second explanation, that relates particularly to Canada, concerns the differing plea-bargaining policies of Canada and the United States. Specifically, offense

category is based upon current charge, yet as a result of plea-bargaining the current charge may not directly reflect the actual crime perpetrated. To the extent that Canadian versus American plea-bargaining conventions differ, charges and hence offense category assignments may be markedly skewed or varied from one country to the next. This could render the current actual differences among groups nonsignificant. Such differences might equally apply between state and federal courts in the U.S., thus leading to the discrepant findings for offense category among the various studies noted. This latter explanation is of course speculation, but it is worthy of note. Concerning the former interpretation, it appears that investigations utilizing the typology will have to adopt a standardized subdivision of offenses before anything else is said about the system's ability or inability to discriminate according to offense category.

Psychiatric Diagnosis

Both Edinger et al. (1982) and the present study found significant differences among groups according to psychiatric diagnosis, yet there was virtually no correspondence between the two studies.

One reason for the lack of congruency may be sample characteristics. Edinger et al. (1982) included both psychiatrically disturbed offenders and unsentenced prisoners undergoing competency evaluations. By contrast, most of the RPC

cases had already received preliminary certification elsewhere. Hence it can be expected that evaluations across the two studies will differ, with the Butner FCI mental health group containing more nonpsychiatric offenders. Unfortunately, Edinger et al. (1982) did not include a "no pathology" category.

A second, and more likely reason for the differences are the diagnostic guidelines employed. Edinger et al. (1982) do not state the criteria used for evaluations, whether these were according to DSM-III (APA, 1980), some more subjective clinical criteria, or even the MMPI itself. A real drawback exists in using the MMPI for such primary diagnoses within an MMPI-based typology study, in that one is merely verifying the profile interpretations without the use of collateral data. A good illustration is to claim support for the notion of type How being comprised of psychotic and neurotic subtypes (Carbonell, 1983) on the basis of their relative elevations on the psychoticism-related scales (Pa, Sc) and the neurotic triad (Hs, D, Hy). However, since Set I and Set II rules specify elevations of T>70 on upwards of 5 scales for classifications of type How, this group will maintain the most elevated scores on the 5 preceding scales in approximately half of all cases. Hence, the "identification" of the neurotic and psychotic subtypes. In effect, the type and subtype are identified by the same rules.

A third factor to which the RPC versus Edinger et al. (1982) differences might be attributed is Edinger et al.'s use of categories that were too broad, where potentially distinctive

diagnoses were subsumed under general categories. Edinger et al. provide no indication as to how their diagnostic categories were collapsed, or even if they were in fact collapsed. In this case, it would be unlikely to find any nosological or conceptual correspondence of categories across the two studies.

Considering all the above, any attempt at inter-study comparability is potentially misleading. It is recommended that additional work be undertaken with psychiatric incarcerate samples, where diagnoses are made according to DSM-III (APA, 1980) guidelines as it was the case presently. In this event, more can be said about the differential psychiatric treatment needs of the various types.

One finding of interest from the RPC psychiatric diagnoses is that of a significantly greater proportion of substance abusers in group Easy. Although in the present study no differences were found with respect to offense category, Edinger (1979) and Megargee and Bohn (1977) both found Easy to be one of the groups with a significantly higher percentage of liquor and drug offenders. Hence, two differing sets of data yield a convergent result.

Modal Characterizations of the Types

One of Megargee and Bohn's (1977) major concerns was the validity of their modal characterizations of the individual types, since these characterizations were to serve as the basis

for differential correctional decisions. Investigations cited in the first part of this paper tended to support the Megargee and Bohn portrayals. This was even the case for the maximum-security studies conducted by Louscher et al. (1983) and Hanson et al. (1983), albeit to a lesser extent. In these, the earlier findings did not generalize to all ten types. However, Hanson et al. and Louscher et al. examined the predictive power of the typology with respect to institutional misconduct, with a very limited look at associated legal, demographic and psychometric variables.

By contrast, the present study utilized a large set of legal, demographic and psychometric measures. As it has been noted in the results section, 19 of 29 comparisons proved significant, indicating that the typology can discriminate among a maximum-security sample. Moreover, the present results displayed convergence with the data of Megargee and Bohn (1977), with regard to the relative scores of groups on the various measures. There did emerge differences concerning the absolute scores on several scales, where CPI scores were appreciably lower for the RPC. However, this result is understandable considering that a psychiatric sample was employed. In short, the modal characterizations provided by Megargee and Bohn (1977) are largely applicable, with the present addition of psychiatric diagnoses indicating differential clinical treatment.

Despite the optimistic tone of the above statements, several major qualifications are in order. First, there existed

a problem in the current study, in that two of the allegedly more deviant types, Foxtrot and Jupiter, were not identified. Also, Bakers were of sufficiently small numbers to be excluded from all statistical analyses. Second, although the relative scores of groups were consistent with those found by Megargee and Bohn (1977), the between-group differences were not as distinct. More specifically, the a posteriori contrasts and the discriminant analysis clearly identified 4 bipolar groups: Easy and Item as the 'good guys,' and Charlie and How as the 'bad guys.' Groups Able, Delta and George were lumped in the middle and appeared distinct according to isolated variables only. Hence, although Megargee and Bohn's (1977) modal characterizations are applicable presently, there exists considerable overlap among groups.

Considering the above, it is suggested that the RPC sample be collapsed into three larger categories representing most deviant (Charlie, How), middle deviant (Able, Delta, George), and most benign (Easy, Item). This may seem a great violation to the system, but the current sample is too homogenous to warrant distinction according to seven separate types. It is of interest to note that this suggested subdivision almost duplicates the more heuristically determined scheme employed by Carbonell (1983) with her MMPI groups. Hence, in smaller, homogenous samples a collapsing of groups may be beneficial for purposes of inmate programming.

To summarize, although the general behavioural trends noted in Megargee and Bohn's (1977) groups characterizations are

presently maintained, the sharp intergroup distinctions are not. This detracts from the generality of the original system in that it must undergo modifications in order to be more applicable to these maximum-security offenders. By way of speculation, this need for modifications may serve as a partial explanation for what Hanson et al. (1983) and Louscher et al. (1983) claimed were unsuccessful results among their high-risk inmates, where only the original system was used.

One additional point requires mention. Even with the above noted recategorization performed, there still exists the 27% of the RPC population who did not take the MMPI, and hence could not be typed. However, it would be foolhardy to assume that those who declined administration were all members of the antisocial type Foxtrot. The obvious reason is that not only disruptive, antisocial individuals refuse testing. A second reason is that it was not empirically determined among RPC inmates where type Foxtrot lies along the continuum of deviance.

Typology Dynamics

Megargee (1977) speculated that his system was dynamic - that is, the older the inmate, the more mature, and hence the more benign his classification. Edinger (1979) interpreted his finding of age differentials among groups, where the younger offenders were more deviantly typed, as empirical support for Megargee's (1977) speculation. Presently, it was contended that

the differences among types may equally be a function of time spent institutionalized. The subsequent analyses tended to support this latter contention.

Despite the present finding of time served and not age being the significant factor, it should be noted that this was a "can't miss" result. Specifically, the RPC admits inmates referred from other legal agencies. It is typical that the more psychiatrically deviant an individual, the sooner his referral after sentencing. Conversely, the less disturbed inmates tend to serve more time prior to referral to the RPC. To the extent that the Megargee MMPI profile types can reflect an offender's degree of pathology, it is easy to see that the more deviant MMPI types would serve less time prior to admission. Since all the data used in the current study were collected on intake, it is understandable that the extremely strong effects for time served would override those for age on admission. Hence, the present results.

Despite the fact that the present finding is not terribly credible, it points to the potential importance of institutional factors in the dynamics of the typology. A more fair test of the proposed relation would be the imposition of controls for the effects of total time served throughout an offender's criminal history, and not just time served on the current sentence.

Group Titles

Some note should be made regarding the alphabetical titles Meyer and Megargee (1977) have assigned the groups. Their original intent was to avoid characterizations of the groups based on names, since descriptive titles are often later proved to be behaviourally inaccurate (Meyer and Megargee, 1977). This was the problem encountered with the original MMPI, where scales were given titles corresponding to clinical diagnoses. Later, however, it became apparent that the MMPI scale labels showed little correspondence to the behavioural disorders they were supposed to identify (Dahlstrom et al., 1975). Drawing from this experience, Meyer and Megargee (1977) decided upon "nondescriptive" alphabetical titles which they hoped were free of meaning, thus placing the onus on examinations of collateral data as a basis for group characterizations.

However, in the presentation of this manuscript to various reviewers, it became clear that these names are not without connotation. For example, most thought it odd that the allegedly most violent group, Foxtrot, would be named after a dance step. Similarly, it was a fortunate stroke of luck that the seemingly best adjusted group, Easy, was given a name which corresponds to the degree of difficulty of their in-house management. In the event of the broad-based implementation of the typology, it is likely that prison personnel's slang impressions of the group titles will interact with their psychological meanings. Being an

MMPI Item and a street "item" are two very different things. For this reason, it is recommended that group titles be changed to single alphabetical characters (such as A, B, C, etc.), or numerical names (such as group 1, 2, 3, etc.). In this way, some potential confusion and erroneous labelling may be avoided.

Summary

The preceding study was undertaken to assess the applicability of the MMPI-based offender typology with Canadian psychiatric incarcerates. In general, the study proved successful in that the majority of measures employed significantly discriminated among groups, and consistencies with past research, among diverse offender populations, were evident.

Several recommendations were made concerning future research to help resolve what appear to be increasingly discrepant findings. These were the adoption of a standardized subdivision of offenses into categories, the use of only DSM-III (APA, 1980) guidelines where psychiatric incarcerates are being investigated, the collapsing of groups into broader subtypes among homogenous samples of maximum-security offenders, and the use of time served throughout an offender's criminal history, in conjunction with age, to assess the system's dynamics.

Concerning the practical use of this classification system with Canadian psychiatric incarcerates, in addition to suggesting a reduction in the number of groups, a rewriting of rules may

have to effected to compensate for the artificial inflation of Canadian MMPI profiles. However, whether this inflation becomes a serious hindrance to the accurate classification of Canadian offenders remains to be seen. Lastly, it was recommended that group names be changed either to single alphabetical letters, or else numerical titles to prevent slang interpretations of the sometimes odd names.

In closing, the MMPI-based typology does appear to hold promise as a classification instrument for Canadian incarcerates, but additional validation studies are in order prior to a general implementation of the system.

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